Argonne NATIONAL LABORATORY

... for a brighter future

U.S. Department of Energy

UChicago ▶ Argonne LLC

Office of Science U.S. DEPARTMENT OF ENERGY

A U.S. Department of Energy laboratory managed by UChicago Argonne, LLC

Vehicle Research at ANL to Support U.S. Department of Energy Goals

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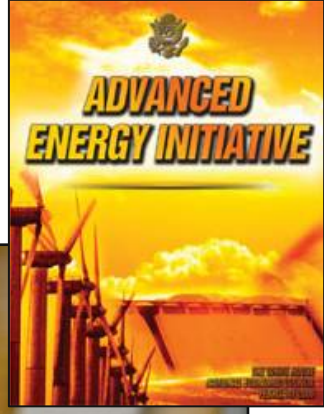
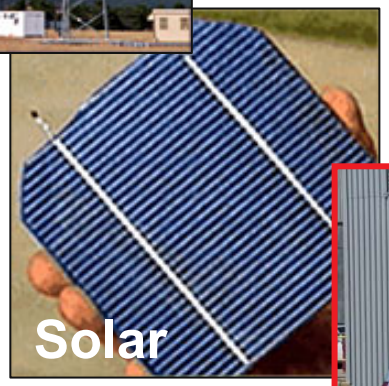
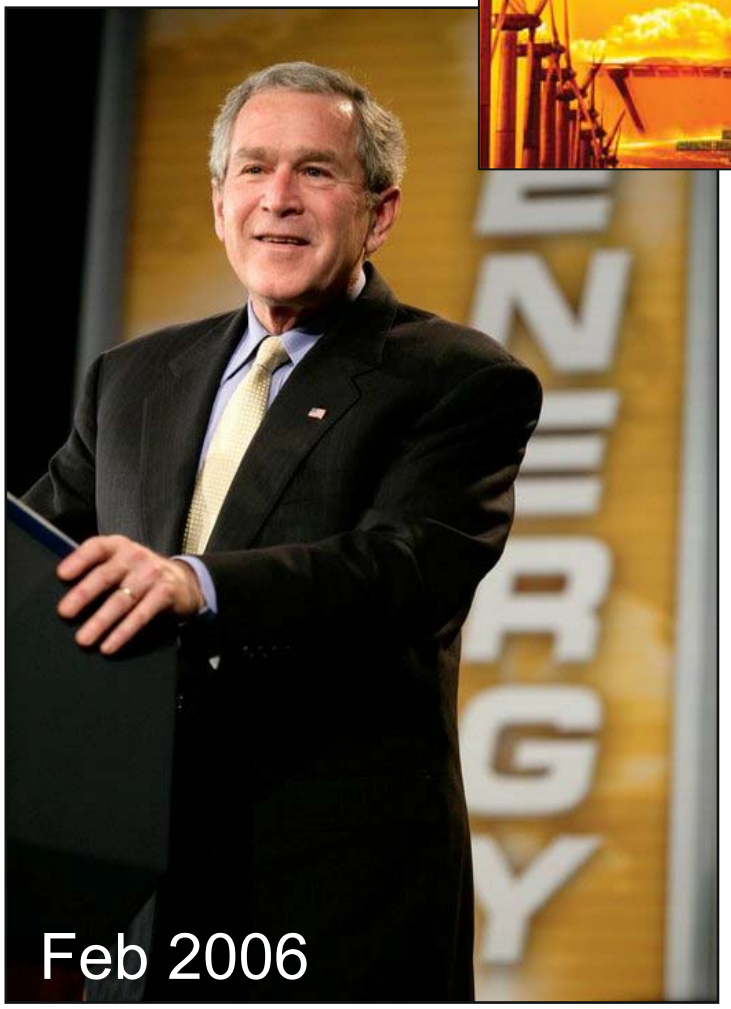
Advanced Energy Initiative: *Argonne Taking Lead on Evaluating Vehicle Technologies*







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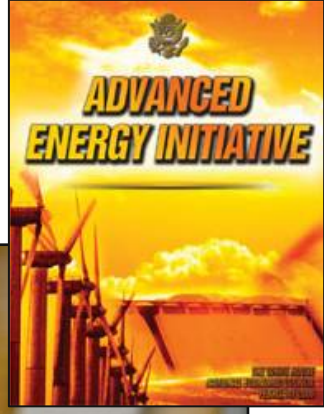
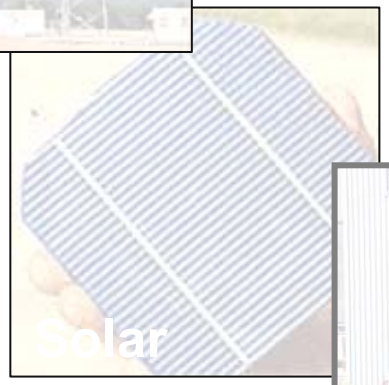
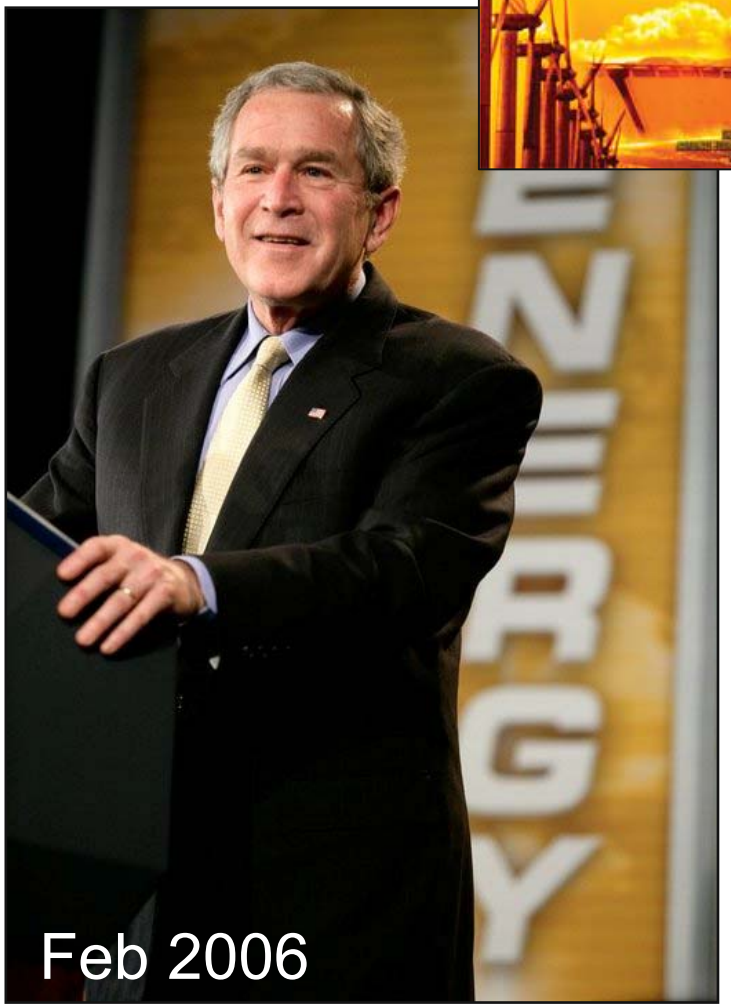
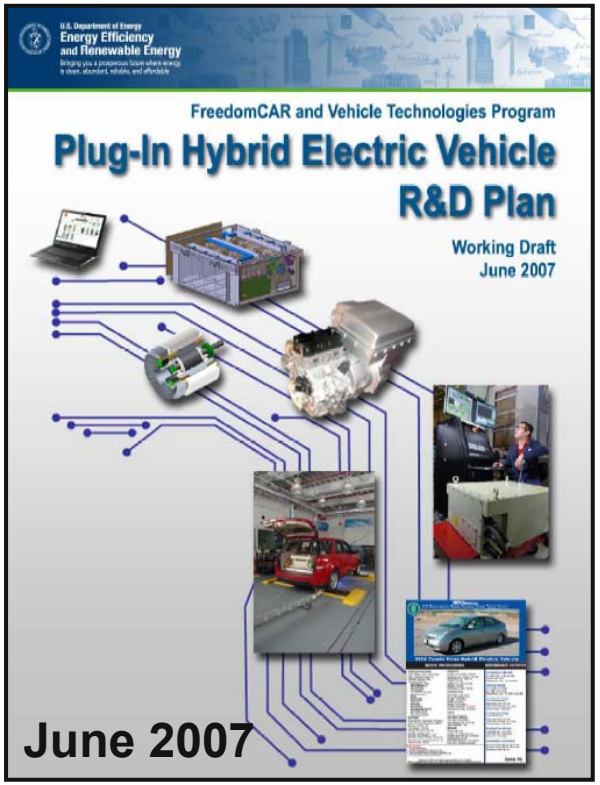






PHEV R&D Plan



Objective: Achieve DOE goals through
Petroleum Displacement – electrification

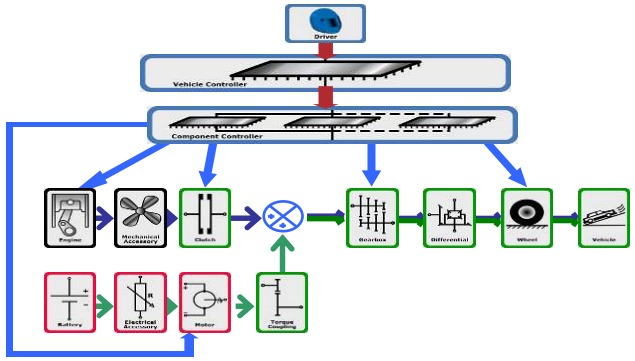
1. Define Goals & Targets
   - Testing & simulation
   - Develop testing standards

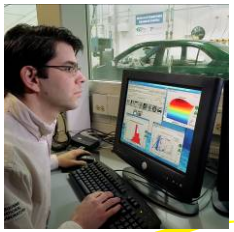
current

2. Technology Demonstration
3. Technology Commercialization

PHEV = Standard wall outlet
= up to 40mi range in electric only

Systems Approach for Vehicle-Level Research Programs





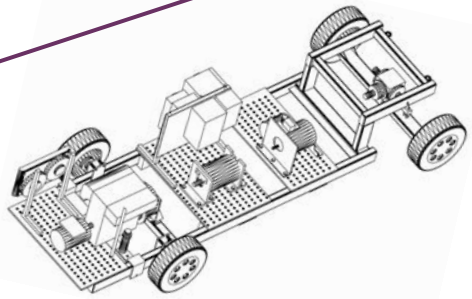
Simulation

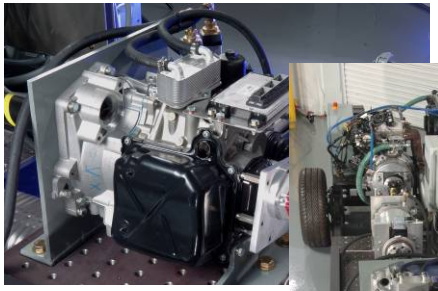
Validation

Modeling and Simulation (PSAT)

Benchmarking & Validation (APRF)

Emulation





Component/System Emulation Using Hardware-In-the-Loop (HIL)

PHEV Testing and Evaluations

- ANL Chairs SAE J1711 – a standard protocol for testing PHEVs
- ANL pioneers instrumentation for new, advanced vehicles
- ANL first to test "conversion" PHEVs and OEM prototypes
  - Inventing new methods for a very different kind of vehicle
- ANL built prototypes to do further research


SAE International

SAE International | SURFACE VEHICLE RECOMMENDED PRACTICE | J1711 | REV. PropDft JUN2006

Issued 1999-03
Revised Proposed Draft 2006-06
Superseding J1711 MAR1999

Recommended Practice for Measuring the Exhaust Emissions and Fuel Economy of Hybrid-Electric Vehicles

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